

What is claimed is:

1. A communication apparatus in an automatic dispenser for communicating data with a communication device, the apparatus comprising:
a receiver; and
logic interfaced with the receiver, the logic configured to detect a reflected detection signal and a communication signal.
2. The apparatus of claim 1 wherein the receiver comprises:
a detection photo detector; and
a communication photo detector.
3. The apparatus of claim 2 wherein the reflected detection signal is a reflection from a sequence of one or more pulses.
4. The apparatus of claim 3 wherein the reflected detection signal has a repetition rate of between 2 and 10 Hertz.
5. The apparatus of claim 2 wherein the communication signal is a sequence of pulses representing data.
6. The apparatus of claim 5 wherein the data rates for the communication signal is approximately 9600 bits per second.
7. The apparatus of claim 1 wherein a low pass filter couples an output from the detection photo detector to the logic.

8. The apparatus of claim 7 further comprising a decoder for coupling an output from the communication photo detector to the logic.
9. The apparatus of claim 2 further comprising a plurality of IR detectors, one of the IR detectors having a hole, wherein another of the IR detectors is aligned with the hole such that an IR signal may pass through the hole and be received by the other IR detector.
10. An apparatus for electronic control of fluid flow when an object is in proximity with the apparatus and for communicating with a communication device, the apparatus comprising:
- a transmitter for transmitting a detection signal;
 - a receiver for receiving a reflected detection signal and for receiving a communication signal; and
 - logic configured to control fluid flow based on said reflected detection signal.
11. The apparatus of claim 10 wherein each of the signals is an infrared signal.
12. The apparatus of claim 10 wherein the detection signal is a sequence of pulses.
13. The apparatus of claim 10 wherein the logic is configured to detect, in said communication signal, information for updating the logic.
14. The apparatus of claim 10 wherein the receiver comprises a detection photo detector, and a communication photo detector.
15. The apparatus of claim 10 wherein the logic is configured to cause a latching solenoid valve to open when the reflected detection signal exceeds a threshold value.

16. The apparatus of claim 10 wherein the receiver comprises a single photo detector coupled to the logic.

17. The apparatus of claim 16 wherein the coupling comprises a low pass filter for passing the frequencies of the reflected detection signal, and a high pass filter passing the frequencies of the communication signal.

18. An electronic dispensing apparatus for controlling fluid flow when an object is in proximity with the apparatus and for receiving information from a communication device, the apparatus comprising:

logic configured to process a reflected detection signal where the reflected detection signal provides the basis for controlling fluid flow;

a detection photo detector for receiving the reflected detection signal and for coupling the reflected detection signal to the logic; and

a communication photo detector for receiving the communication signal and for coupling the communication signal to the logic.

19. The apparatus of claim 18 wherein the communication photo diode coupling to the logic comprises a decoder.

20. A method of both detecting objects and communicating from a single electronically operated dispensing device, the method comprising the steps of:

transmitting a detection signal;

detecting a reflected detection signal;

actuating a valve in response to the detecting step; and

receiving a communication signal from a communication device.

21. The method of claim 20 wherein the detection signal is an infrared signal.

22. The method of claim 20 wherein the detecting step comprises the steps of:
receiving the reflected detection signal of the detection signal at a reflection photo detector;

coupling the reflected detection signal to a signal processor; and
comparing, in the signal processor, the photo detector signal to a threshold value.

23. The method of claim 20 wherein the detection signal is one or more infrared pulses.

24. The method of claim 20 wherein the detection signal is transmitted from an infrared emitter and the communication signal from a portable communication device.

25. The method of claim 20 wherein logic is configured to process the reflected detection signal and the communication signal.

26. The method of claim 20 wherein the detecting step is performed by one of a plurality of infrared detectors, the one infrared detector having a hole, wherein the method further comprises the steps of:

transmitting an infrared signal through the hole; and
detecting the infrared signal via another of the plurality of infrared detectors.

27. In an automatic dispensing device, a method for object detection and for communicating, the method comprising the steps of:

transmitting a detection signal;
receiving a reflected detection signal and a communication signal utilizing a single photo detector; and
actuating a valve in response to the receiving step.